

## New Distribution Records for North American Bremidae, with the Description of a New Species (Hym.).

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In the course of examining a large number of specimens of *Bremus* (*Bombus*) and *Psithyrus* from various parts of North America, the writer has obtained many new records of distribution for members of these two genera. Dr. Franklin in his monograph on "The Bombidae of the New World" gives a table in which he tabulates the species as they occur in the various political divisions. He says "Gaps in the known habitat have, in this list, been filled in, as far as they reasonably could be, according to the author's judgment of the unknown habitat based on the known." Additions to this original list were published by Franklin in the November number of the *Entomological News* for 1915, and Lutz (1916) and Sladen (1916, 1919) have added several more records.

Besides those species given below that are not listed by Franklin from certain political divisions or states, there are others accredited to certain states by Franklin on the basis of their known range, which are here actually recorded from those states.

1. *Bremus occidentalis* Greene. Nogales, Arizona, seven queens, July 1-12, 1917 (E. J. Oslar—Author's Collection).
2. *Bremus occidentalis* subsp. *nigroscutatus* Franklin. Nogales, Arizona, one queen, July 7, 1917 (E. J. Oslar—Author's Collection).
3. *Bremus terricola* Kirby. Ames, Iowa, one female, June 12, 1888 (Gillette—Ames Agr. College Collection, Ames, Iowa); Algonquin, Illinois, one worker, July 21, 1914 (Nason—Illinois State Natural History Survey Collection); Northern Illinois, two workers (Bolter Collection—University of Illinois Museum); Mt. Mitchell, North Carolina, three queens and five workers, July 18, 1919, about 6700 ft. alt. (R. W. Leiby—North Carolina State Ent. and Author's Collections), and Yonahlossee Road, near Blowing Rock, North Carolina, one male, mid-Sept., 1912 (C. L. Metcalf—North Carolina State Ent. Collection); Kempt Shore, Nova Scotia, six workers, August 14, 1914 (E. Mosher—Author's Collection); Digby, Nova Scotia, many workers, June 2-20, 1908, and many males, June 23-July 15, 1908 (Russell—Nason Collection, University of Illinois Museum); Alpena, Michigan, eight males, Sept. 25, 1908 (Nason—

University of Illinois Museum); Onckamo, Michigan, ten workers and one male July 12, 1914 (M. MacGillivray—Author's Collection); Griswolda, Michigan, one worker, August 21, 1915 (T. H. Frison—Author's Collection); Lake County, Illinois, one queen, May 7, 1911 (Milwaukee Public Museum Collection No. 47936). All the specimens of this species from North Carolina have a large amount of yellow pile on the scutellum.

4. *Bremus affinis* Cress. Dane County, Wisconsin, one queen, May 26, 1914 (W. S. Marshall—University of Wisconsin Collection); Milwaukee, Wisconsin, all forms (University of Wisconsin and Milwaukee Public Museum Collections).

5. *Bremus borealis* Kirby. Waukegan, Illinois, two queens and two workers, August 24-25, 1917 (J. R. Malloch and T. H. Frison—Ill. State Nat. Hist. Survey and Author's Collections); Digby, Nova Scotia, one worker, June 20, 1908 (Russell—Nason Collection, University of Illinois Museum); Kempt Shore, Nova Scotia, one queen, two workers and one male, August 14-22, 1916 (E. Mosher—Author's Collection).

6. *Bremus appositus* Cress. Patagonia Mountains, Arizona, seven queens and one worker, July 12-14, 1917 (E. J. Oslar—Author's Collection); Catalina Mountains, Arizona, two queens, June 24, 1917 (E. J. Oslar—Author's Collection).

7. *Bremus ternarius* Say. Ames, Iowa, one specimen (Ames Agr. College Collection); Digby, Nova Scotia, two queens and forty-seven workers, June 22-July 15, 1908 (Russell—Nason Collection, University of Illinois Museum); Kempt Shore, Nova Scotia, two workers, August 16, 1916 (E. Mosher—Author's Collection); Alpena, Michigan, thirteen workers and twenty-one males, September 25, 1908 (Nason—Nason Collection, University of Illinois and Author's Collection).

8. *Bremus fernaldi* Franklin. Catalina Mountains, Arizona, two queens, three workers and two males, June 24, 1917; Nogales, Arizona, two queens, July 12, 1917 (E. J. Oslar—Author's Collection).

The two queens from Nogales and one of the workers from the Catalina Mountains exhibit considerable yellow pile on the basal middle portion of the second dorsal abdominal segment, thus slightly differing from the type females as described by Franklin and agreeing more with the male in this respect. Likewise, in all of the workers and queens the fifth and sixth abdominal segments have a large amount of yellowish-white pile, the corbicular fringes are slightly ferruginous in several specimens and the hind femur, especially in the queen, has only a very little yellow pile.

9. *Bremus vosnesenskii* Rad. Nogales, Arizona, eight queens, July 8-17, 1917; Patagonia Mountains, Arizona, seven queens, July 11, 1917; Catalina Mountains, Arizona, three workers and one male, June 24-25, 1917 (E. J. Oslar—Author's Collection).

10. *Bremus vagans* F. Sm. Kempt Shore, Nova Scotia, two queens, three workers and one male, August 14-16, 1916 (E. Mosher—Author's Collection).

11. *Bremus mixtus* Cress. Salt Lake City, Utah, one queen (Bolter Collection—University of Illinois Museum).

12. *Bremus flavifrons* Cress. Forest Grove, Oregon, one queen, May 21, 1919 (A. C. Burrill—Author's Collection).

13. *Bremus ambiguus* Franklin. Catalina Mountains, Arizona, two workers, June 24 and 26, 1917 (E. J. Oslar—Author's Collection). Dr. Franklin very kindly confirmed my identification of this species, which, thus far, has been recorded only from the type localities of Washington and California.

14. *Bremus fervidus* Fabr. Kempt Shore, Nova Scotia, one male and many workers, August 11-22, 1916 (E. Mosher—Author's Collection).

15. *Bremus californicus* F. Sm. Nogales, Arizona, four queens, July 7-8, 1917 (E. J. Oslar—Author's Collection).

16. *Bremus pennsylvanicus* DeGeer. Dane County, Wisconsin, three queens and one worker, July 2-25, 1904 (C. T. Vorhies—University of Wisconsin Collection); Dane County, Wisconsin, one queen, July, 1913, and one worker October 16, 1906 (W. S. Marshall—University of Wisconsin Collection); Dane County, Wisconsin, many specimens of all forms (Milwaukee Public Museum and Wisconsin State Ent. Collection). Alpena, Michigan, one worker, Sept. 25, 1908 (Nason—University of Illinois Museum). Franklin asks, "Is it present and, if so, rare or abundant in northern Wisconsin. . . .?" This species is not very rare in any part of Wisconsin, but is much commoner in the southern and central parts of the state than in the northern part. Also recorded from Wisconsin by Graenicher, in 1911, under the name *B. americanorum* Fabr.

17. *Bremus nevadensis* Cress. Northern Illinois, one queen (Bolter Collection—University of Illinois Museum).

18. *Bremus fraternus* F. Sm. Green Lake, Wisconsin, one worker, July, 1911 (University of Wisconsin Collection).

19. *Psithyrus laboriosus* Fabr. Digby, Nova Scotia, one female, July 15, 1908 (Russell—Nason Collection, University of Illinois Museum).

20. *Psithyrus variabilis* Cress. Raleigh, North Carolina, many queens and males, August-November (C. S. Brinley and J. E. Eckert—North Carolina State Entomologist's and Author's Collections); Poy Sippe, Wisconsin, one male, July 7, 1920 (T. H. Frison—Author's Collection). Previously listed from Wisconsin by Graenicher in 1911, but not recorded by Franklin from this state.

21. *Psithyrus crawfordi* Franklin. Nogales, Arizona, three queens, July 7-9, 1917; Oracle, Arizona, one male, June 5, 1917 (E. J. Oslar—Author's Collection). Franklin says, "It is quite possible that

these two specimens [the queen from California and the male from Oregon], coming from such widely separated localities, do not belong to the same species, but they are so much alike in general appearance that it is my belief that they belong together." The capture of both sexes within the same general region is further evidence that the queen and male described by Franklin are the same species.

22. *Psithyrus ashtoni* Cress. New London, Wisconsin, six males, July 11, 1920 (T. H. Frison—Wisconsin State Ent. and Author's Collections); Two Rivers, Wisconsin, twenty-eight males, August 26, 1912 (J. W. Folsom—Author's Collection); Vilas County, Wisconsin, one queen and five males, August, 1913 (W. M. Marshall—University of Wisconsin Collection); Madison, Wisconsin, one male, August 5, 1919 (Z. T. Brown—Wisconsin State Ent. Collection); Selon Springs, Wisconsin, one queen, July 7, 1909 (Milwaukee Public Museum Collection); Alpena, Michigan, two small females, June 16, 1910 (Nason Collection—University of Illinois Museum); Onekamo, Michigan, two males, July 12, 1914 (H. MacGillivray—Author's Collection); Griswolda, Michigan, five males, August 21, 1915 (T. H. Frison—Author's Collection).

23. *Psithyrus tricolor* Franklin. New London, Wisconsin, sixteen males, July 11, 1920 (T. H. Frison—Wisconsin State Entomologist's and Author's Collections). This is the first record of this species in any of the North Central States, the species being previously recorded in the United States from New York, New Hampshire, Washington and Colorado.

Among a collection of bumblebees from the region of Nogales, Oracle, and the Patagonia and Catalina Mountains, Arizona, is the following new species.

*Bremus (Bombus) franklini* n. sp.

♀. Queen. Face with black and whitish-yellow pile intermixed, the black pile dominant, the whitish-yellow pile most abundant ventrad of the articulation of the antennae. Occipital orbits dark, nearly destitute of pile adjacent to outer margin of eye, somewhat coarsely and densely punctate. Occiput with a triangular patch of nearly pure whitish-yellow pile. Labrum with tubercle-like areas large and well separated, coarsely punctate; shelf-like projection moderately wide and conspicuous; pile on ventral margin of labrum long and ferruginous. Mandible distinctly four-toothed, with coarse scattered punctures; pile at distal end short, on outer proximal margin very long, ferruginous. Clypeus well punctate, particularly so in anterior corners and on dorsal portion. Malar space somewhat shorter than its width at articulation of mandibles, one-half greatest width of eye, impunctate, polished. Ocelli situated just above supra-orbital line or narrowest part of vertex; lateral ocelli as far distant from each other as distant from median edge of

eye; area just laterad of lateral ocelli impunctate, polished, but becoming punctate again near median edge of eye. Flagellum about one and three-fourths times as long as the scape; third antennal segment longer than the fifth, the fifth a trifle longer than the fourth.

Thorax with dorsal cephalic portion covered with pure yellow pile, the yellow pile extending (except for a little black pile on the middle of its posterior border) caudad to the cephalic margin of the scutellum. Scutellum with pure black pile; disk naked, impunctate, polished. Mesopleura, except for the yellow pile of dorsum slightly extending down below the level of the bases of wings, jet black. Metapleura and propodeum jet black.

Abdomen with the first four dorsal segments entirely jet black, the fifth dorsal segment with some whitish-yellow pile on its lateral and apical margins, sixth dorsal segment black. Venter black. Hypopygium without a median carina.

Legs mostly jet black, but with some lighter or ferruginous short pile on tarsal segments. Corbicular fringes black. Hind metatarsi distinctly arcuate.

Wings very dark, with a slight violaceous reflection.

Length, 23 mm.; spread of wings, 44 mm.; width of abdomen at second segment, 10.5 mm.

*Holotype* queen, July 7, 1917 (Collector E. J. Oslar). *Paratopotype* queen, July 8, 1917 (Collector E. J. Oslar). Nogales, Arizona. Male and worker unknown.

This large species, judging from the queens alone, is apparently closely related to *B. occidentalis* Greene. It may be distinguished easily from *B. occidentalis* Greene and its varieties, by the marked differences in the color pattern of the dorsum of the thorax, apical segments, the prominent whitish-yellow pile on the occiput, violaceous wings, and black corbicular fringes. *B. franklini* also lacks the transverse yellow band on the fourth dorsal abdominal segment, so characteristic of *B. vosnesenskii* Rad. and usually of *B. californicus* F. Sm., two other species with contrasting yellow and black pubescence from this region.

I name this species in honor of Dr. Henry J. Franklin, whose monograph of this group of bees brought order out of chaos in the American species.

*B. franklini* and *B. occidentalis* are the first species of the *Terrestris* Group Rad. to be found south of the southwestern deserts of the United States. *B. franklini* probably occurs in the mountain ranges in the northwest of Mexico.